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STANDARD DESCRIPTIONS OF VEGETABLES

BEANS

A Guide to Seed Growers

BY

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ASSISTANT IN VEGETABLE GARDENING

WITH WATER COLOUR DRAWINGS BY FAITH FYLES, B.A.

DIVISION OF HORTICULTURE
DOMINION EXPERIMENTAL FARMS

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PLATE I

1. Challenge Black Wax; 2. Wardell Kidney Wax; 3. Round Pod Kidney Wax (Brittle Wax); 4. Stringless Kidney Wax; 5. Davis White Wax; 6. Pencil Pod Wax; 7. Webber Wax; 8. Flageolet Wax; 9. Hodson Wax (Canning); 10. Bountiful; 11. Masterpiece; 12. Early Red Valentine; 13. Stringless Green Pod; 14. Stringless Refugee; 15. Refugee (1,000 to 1).



PLATE II

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DOMINION OF CANADA

DEPARTMENT OF AGRICULTURE

BULLETIN No. 153—NEW SERIES

Standard Descriptions of Vegetables

Beans

FOREWORD

With the idea of a fixed type for each variety of garden bean, there has arisen a need for a type book dealing with the technical description of each of the twenty-five varieties decided upon as the most outstanding by the vegetable committee under the Canadian Seed Growers' Association. This list of selected varieties is included in the Standard List of Variety Names that was prepared by the above mentioned committee.

In preparing these descriptions, as far as possible, four samples or strains of seed of each variety were obtained and plants grown from these. Typical plants were then selected from the most uniform rows for descriptions and the preparation of photographs. In many of the varieties it was found difficult to get satisfactory plants suitable for the description, but on the whole the majority of the samples were quite true to one type and variety name.

Since this bulletin is to serve as a guide to seed growers, in the form of a type book, no reference is made to rating of the different varieties one with the other. It is hoped that this publication will be a means of establishing a fixed type, for each variety, for present and future seed production. By referring to the standard description, seed growers can easily maintain the seed stock in a high degree of purity whether Foundation, Elite Stock or Registered grade.

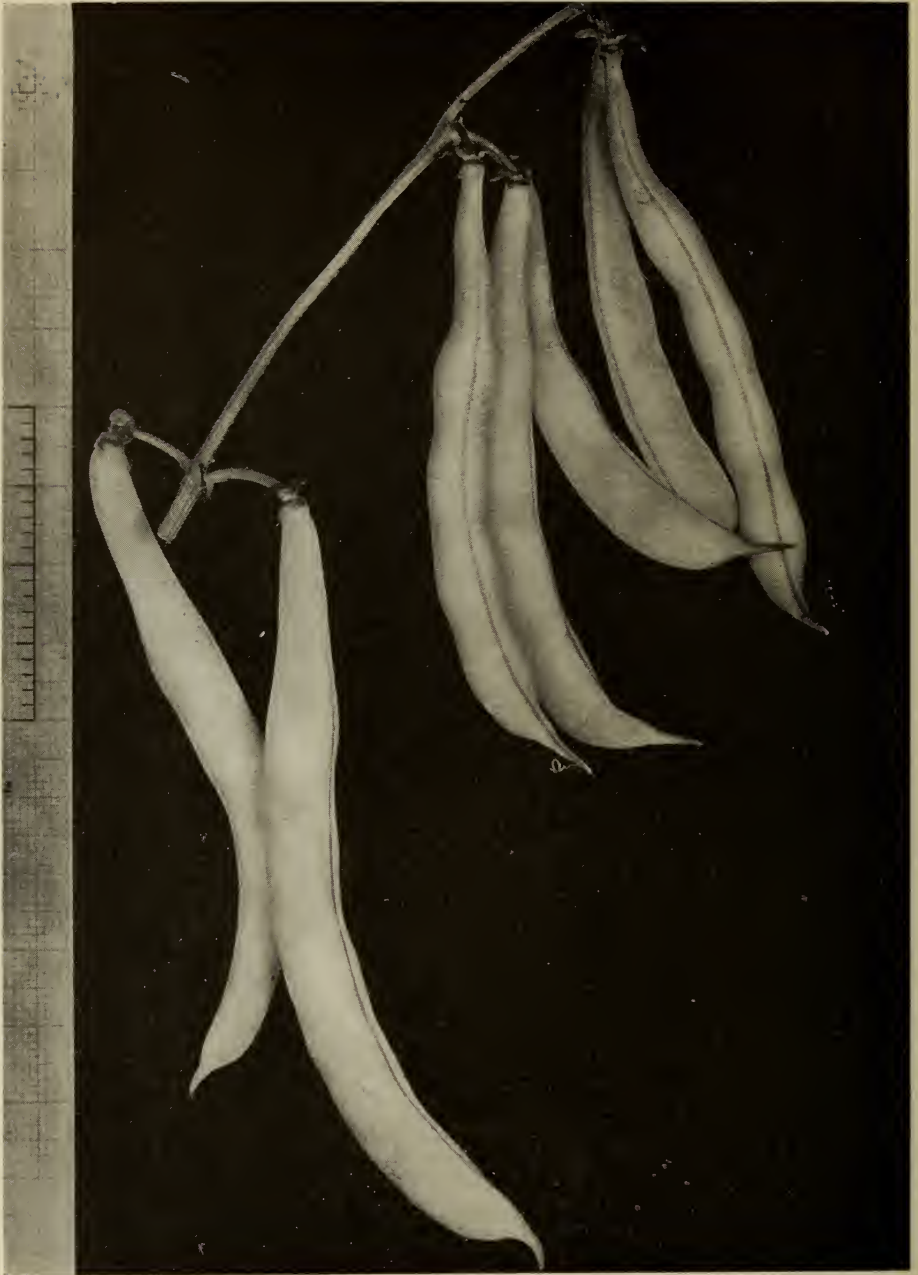
When the Standard List of Variety Names was prepared, one of the chief objectives was to reduce the variety names to a minimum and to do away with synonymous names or overlapping names that were found very confusing to those buying seed, and no doubt a costly overhead to those preparing expensive catalogues. In the preparation of this list of choice varieties it was deemed advisable to mark some of the outstanding ones with an asterisk (*), thus indicating that those varieties were first choice for registration with the Canadian Seed Growers' Association. However, should a grower choose to grow seed of a desirable strain of one of those not marked, application may be made for the stock to be registered, and if found satisfactory would be given the proper rating. The synonyms for each variety have been given as far as possible and are in italics.

This descriptive work is being done in the Horticultural Division, Central Experimental Farm, Ottawa, in co-operation with the Canadian Seed Growers' Association and the Seed Branch, Department of Agriculture.

The grateful thanks of the writer are tendered to all those who have contributed to the preparation of this bulletin.

Dwarf Bean Varieties

Phaseolus vulgaris var. *humilis*



CHALLENGE BLACK WAX
(Background, margin, $\frac{1}{20}$ of an inch)

CHALLENGE BLACK WAX

Synonyms.—Challenge Dwarf Black Wax, Challenge Extra Early Black Wax, Challenge German Black Wax, Extra Early Challenge Black Wax.

Seed Characters.—The seed coat is dull black, with white or silver at the eye. Shape varies from bluntly round, thick, to flattened elongated, measuring $1\frac{7}{32} \times \frac{9}{32} \times \frac{7}{32}$ of an inch.

Season.—Extremely early maturing.

Plant.—In size, medium to small, averaging 10 inches high, quite erect in habit if hilled up, compact, somewhat weak in appearance. Susceptible to disease. Leaflets, medium size, quite thin, slightly rough. Colour, light green.

Flowers.—Colour, pink or slightly mauve, size medium, in pairs, in clusters of 3 or 4 pairs half hidden by the foliage.

Fruiting Habit.—Pods, mostly in pairs sometimes singly, in loose medium sized clusters, almost hidden by the foliage. Some pods droop to the ground. Colour, clear wax, quality good, stringless, brittle, tender. Shape, slightly curved, round-oval in cross section. Size, medium to stout, length varies between $4\frac{1}{2}$ and $5\frac{1}{2}$ inches. Suture well defined. Point or snout medium length, bent back. Seeds well spaced, arranged straight in the pod, usually six in number.

Adaptation.—A desirable early maturing market and home garden variety. Too weak a grower and being very susceptible to disease renders it useless for the main or midseason crop.



WARDWELL KIDNEY WAX
(Background, margin, $\frac{1}{50}$ of an inch)

WARDWELL KIDNEY WAX

Synonyms.—Early Kidney Wax, Early Wardwell Kidney Wax, Kidney Wax, Kidney Wax Wardwell, Milliken Wax, Pearl Wax, Wardwell Delicious Kidney Wax, Wardwell Improved Kidney Wax, Wardwell Selected Kidney Wax.

Seed Characters.—The seed coat is white, marbled or veined, with about one-third of the hilum side rather irregularly marked with deep brown and buff, occasionally some dots of brown are scattered or smudged on the white sides. Shape reniform measuring $1\frac{9}{32} \times 1\frac{10}{32} \times \frac{7}{32}$ of an inch.

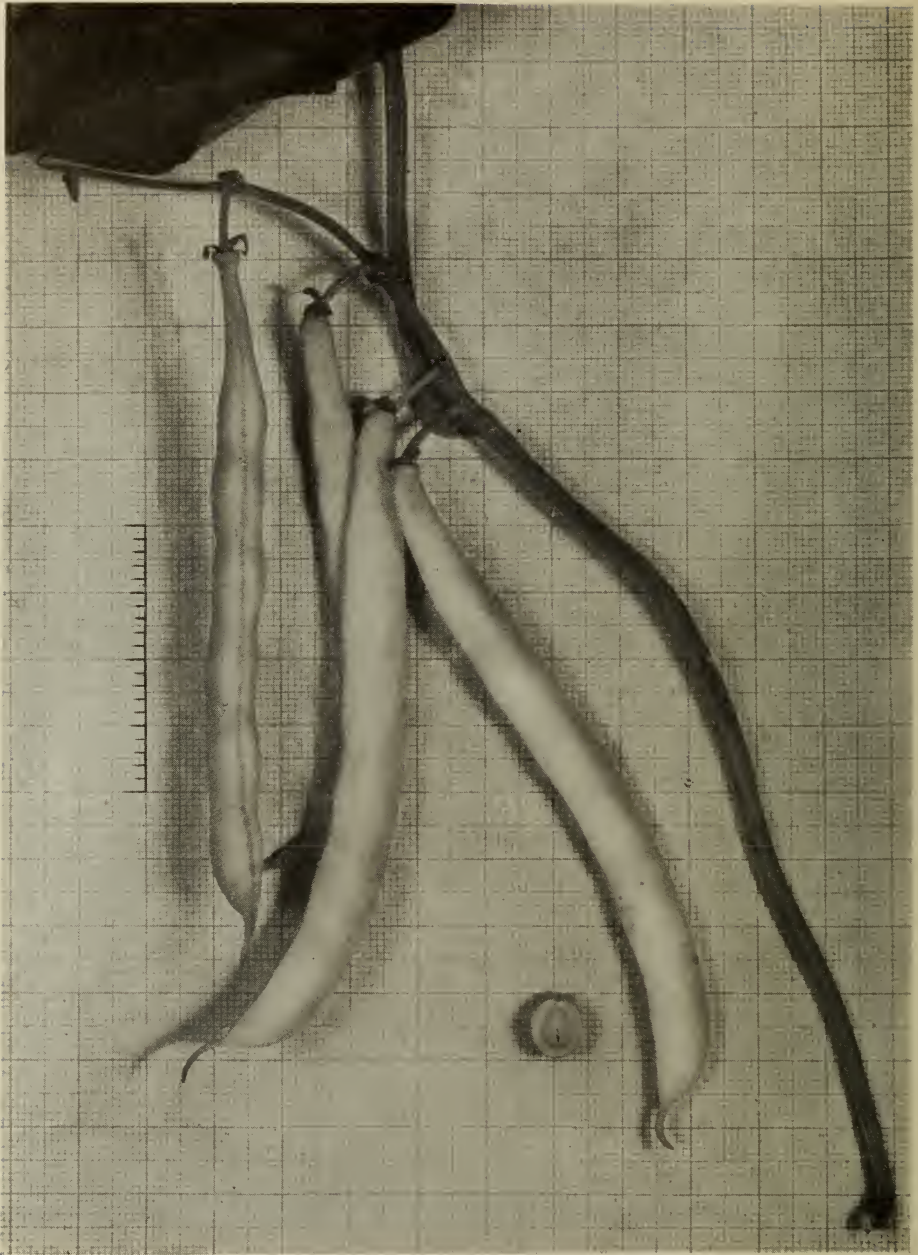
Season.—Early, intermediate or main crop.

Plant.—In size, large to medium, fairly erect, stout, averaging 12 inches high. Moderately free of disease. Leaflets, large, thin, slightly rough. Colour, dark green.

Flowers.—Colour, white. Size, medium, in pairs, sometimes single, borne rather loosely, on a stem from two to five inches long, half hidden by the foliage.

Fruiting Habit.—Pods mostly in pairs and single in small clusters of two or singly, near the end of a long stem or branch, well above the leaves except when the branch droops. Susceptible to disease. Colour, good wax yellow. Shape, curved backwards, flat. Surface smooth, suture dark. Size, stout broad, averaging $5\frac{1}{2}$ inches long. Point from back almost centered, short. Quality, good, stringless when young, walls fleshy with little fibre, becoming fibrous and stringy as they mature. Seeds well spaced, arranged straight in the pod, usually six seeds in each.

Adaptation.—Home and Market Garden.



* ROUND POD KIDNEY WAX
(Background $\frac{1}{20}$ of an inch)

***ROUND POD KIDNEY WAX (BRITTLE WAX)**

Synonyms.—Brittle Round Wax, Brittle Wax or Round Pod Kidney Wax, Burpee Brittle Wax, Dwarf Brittle Wax, New Brittle Wax, New Early Brittle Wax, Round Podded Brittle Wax.

Seed Characters.—The seed coat is white, finely veined, with a dark brownish mark usually in two shades confined to the hilum side in the form of a dagger. Shape, distinctly kidney like, elongated, slender, rounded in cross section, indented at the eye measuring $1\frac{3}{32} \times \frac{9}{32} \times \frac{5}{32}$ of an inch.

Season.—Second early and main crop, extends over long season.

Plant.—Moderate in size, erect in habit when young, but drooping when laden with pods. Stems short, stout, pale green. Leaflets large, medium thick, rough, light green.

Flowers.—The flowers are white, small, in pairs, in small clusters, loose, near the outside of the plant. Season of bloom extends over a long period.

Fruiting Habit.—Pods produced in small loose clusters, near the end of the stems, that are quite upright at first, but droop as the season advances. Colour, waxy yellow, surface smooth, walls thick, fleshy, tender, brittle, entirely stringless, little or no fibre. Shape crease-backed slightly, bent back then forward. Point greenish yellow. Length $4\frac{1}{2}$ inches. Cross section quite round, full between the seeds. Somewhat subject to disease. Ripe pods shell quite easily.

Adaptation.—An excellent variety for home and market garden, the quality being unsurpassed by any other variety. Ripe seed suitable for baking.



STRINGLESS KIDNEY WAX
(Background $\frac{1}{10}$ of an inch)

STRINGLESS KIDNEY WAX

Synonyms.—Burpee Kidney Wax, Burpee New Kidney, Burpee New Kidney Wax, Faribault Kidney Wax, New Baltimore Stringless Wax, New Kidney Wax (Burpee), Wonderful New Stringless Wax.

Seed Characters.—The seed coat is white, marbled or veined, oblong, slightly kidney-shaped, with the ends well rounded. Cross section slightly flattened on the sides, with a very pronounced dark brown eye, confined to the hilum side. The seeds average $1\frac{8}{32} \times \frac{9}{32} \times \frac{6}{32}$ of an inch. Resembling Round Pod Kidney Wax very closely.

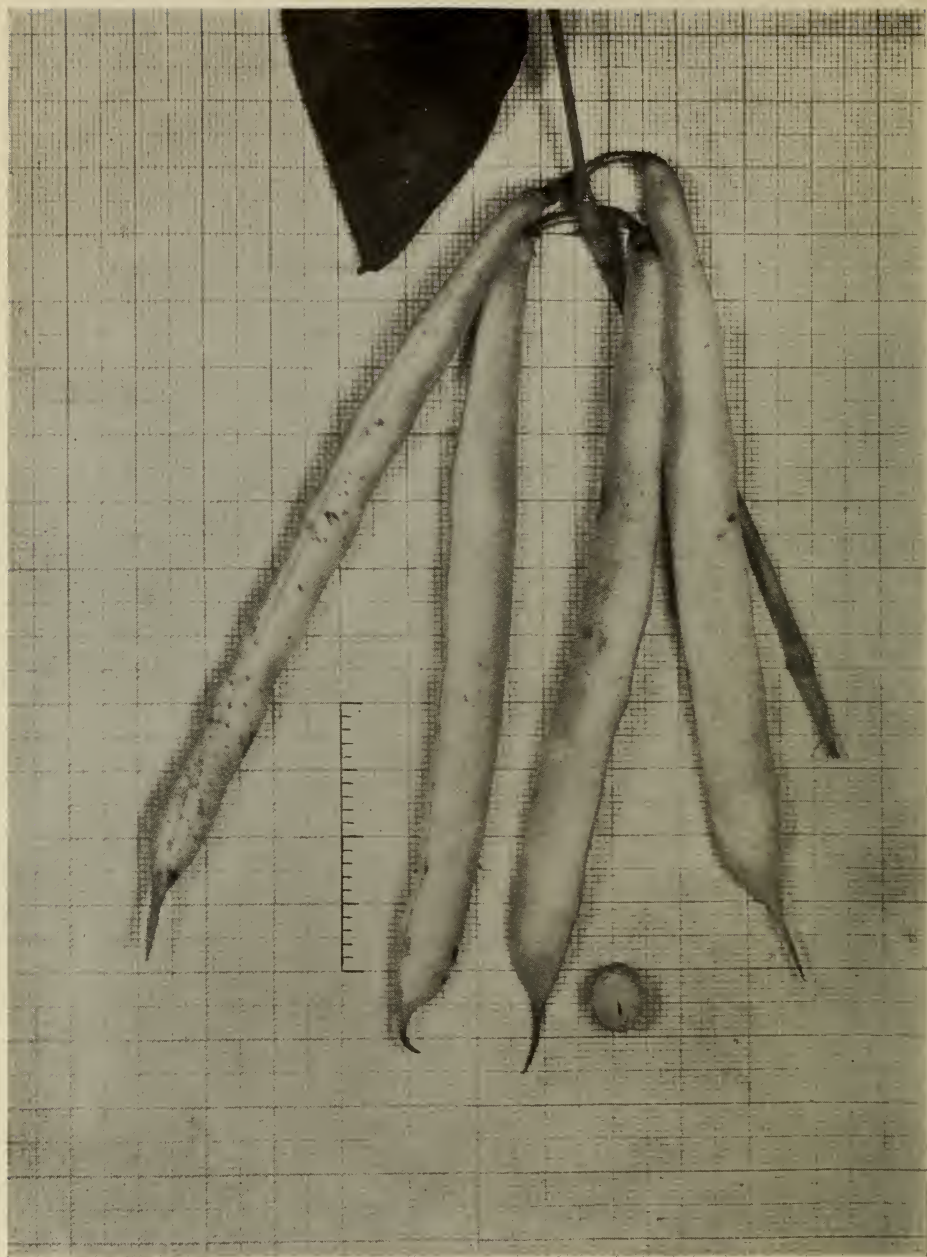
Season.—Main crop.

Plant.—Medium to large in size of branching habit. Leaflets pale green, medium to large size, thin and quite smooth, resembling Round Pod Kidney Wax.

Flowers.—These are white very much like Round Pod Kidney Wax and produced in pairs, small, half hidden in the foliage.

Fruiting Habit.—The pods are produced more abundantly than by Round Pod Kidney Wax, in pairs well above the ground, although the clusters are only of medium size, loose. Pods are slender, flat-oval averaging $4\frac{16}{32}$ inches long by $1\frac{5}{32}$ wide by $1\frac{9}{32}$ thick, rich yellowish wax, tender, brittle, stringless when young, stringy when old, practically no fibre, straight, snout bent backward then forward, suture quite distinct, season long.

Adaptation.—Home and market garden. Ripe seed suitable for baking.



DAVIS WHITE WAX
(Background $\frac{1}{20}$ of an inch)

DAVIS WHITE WAX

Synonyms.—Burrell Spot Free Davis White Wax, Davis Kidney Wax, Davis Wax, Davis White Kidney Wax, Davis White Seeded Wax, Dwarf Davis White Wax, Dwarf White Wax Stringless, Elgin White Wonder, Gurney Everbearing Wax Rust Proof, Improved Davis White Wax, Kidney Wax Davis, King of the Wax, New Davis White Wax, Prolific Everbearing Rust Proof, Tait New White Wax, Venturia Wonder, White Wax.

Seed Characters.—The seed coat is white with fine veins. Oblong kidney-shaped almost round in cross section, ends rounded with a pale shading of yellow around the hilum. The seeds average $1\frac{8}{32} \times \frac{9}{32} \times \frac{8}{32}$ of an inch.

Season.—Early and midseason.

Plant.—A moderate growing variety attaining a height of 16 inches, strong erect. Leaflets large or medium, medium to pale green, thin somewhat rough. Branches pale green.

Flowers.—The flowers are white, medium size, in pairs in small clusters half hidden in the foliage.

Fruiting Habit.—The pods set well, over a short season in small loose clusters, mostly towards the outside of the plants, resting on the ground. They average 7 inches in length, straight, flat, clear bright yellow, with a very well defined greenish point. The walls of the pods are only fairly thick and fleshy, tough, much fibre inside, stringy when young and very stringy when old. Season short, but is remarkably even in maturing.

Adaptation.—A useful variety for market garden and truck gardening, ships well and is attractive. The dry seeds being white makes this a remarkably good dual purpose variety for baked beans and for snap pods.



PENCIL POD WAX
(Background $\frac{1}{20}$ of an inch)

PENCIL POD WAX

Synonyms.—Black Pencil Pod Wax, Black Pencil Pod, Giant Pencil Pod, Giant Stringless Wax, Golden Scimitar, Improved Black Wax or Pencil Pod, New Pencil Pod Wax, Pencil Pod, Pencil Pod Prolific Black Wax, Pencil Pod Black Wax, Round Prolific Black Wax, Salzer Giant Stringless Wax.

Seed Characters.—The seed coat is shiny-black. Oblong shaped, bluntly rounded or truncated ends, some seeds are round in cross section while others are slightly compressed. They measure $1\frac{1}{32} \times \frac{9}{32} \times \frac{8}{32}$ of an inch, straight at the eye, silver of pod sometimes adhering at the eye.

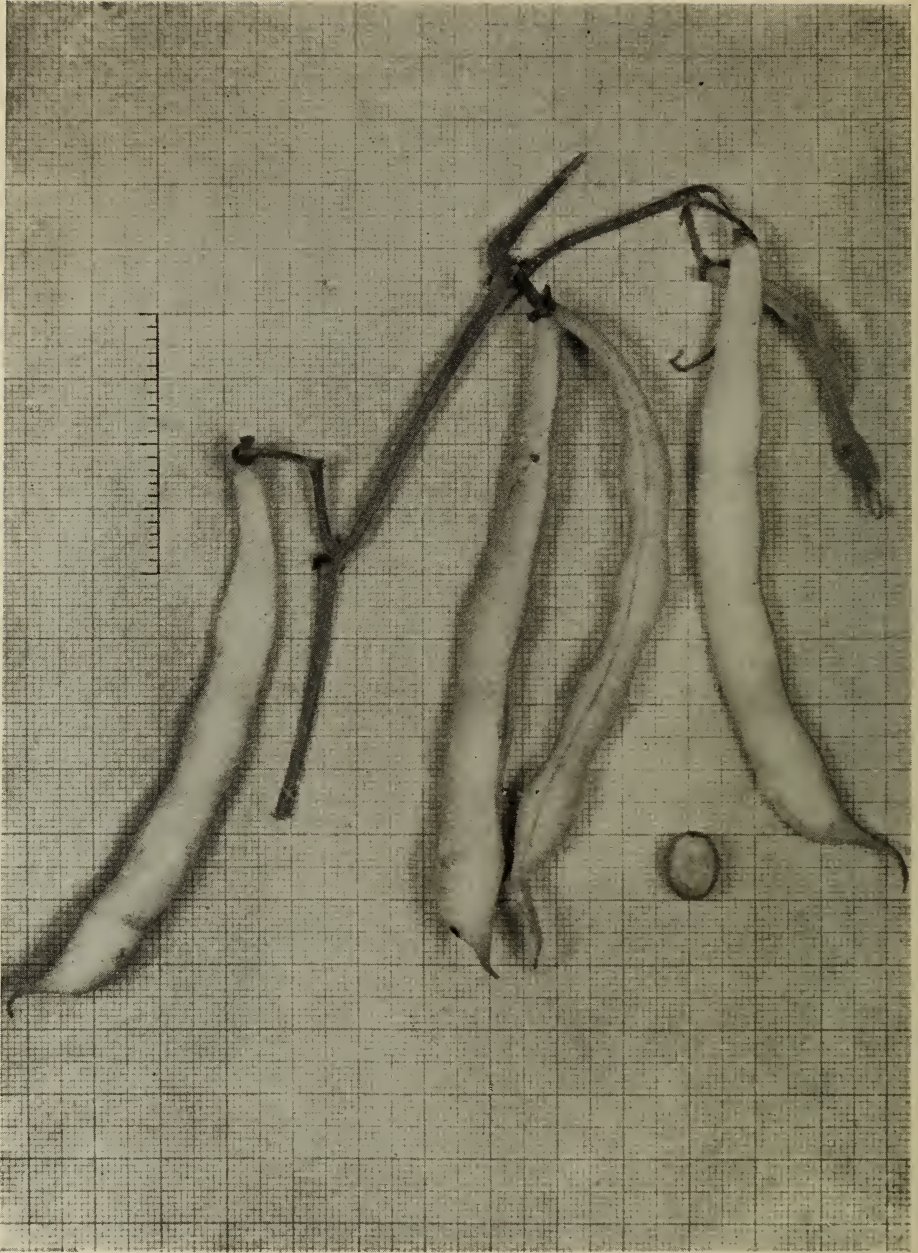
Season.—Medium early but extends over a long period.

Plant.—The plants are large, dwarf in habit averaging 16 inches high, strong, erect when young but spread out as the pods develop. Leaflets large, thick, rough, medium green. Branches are green tinged with purple.

Flowers.—The flowers are pink produced in pairs, in medium to small clusters, well hidden in the leaves.

Fruiting Habit.—The pods are produced in loose clusters, well distributed throughout the plant. The outside clusters sometimes droop to the ground as the season advances. Colour, clear yellow, surface quite smooth, walls thick, fleshy, brittle, tender, absolutely stringless, little or no fibre. Shape, crease-backed decidedly scimitar or curved backward. Point poorly defined stout, medium length, sloping backward then forward. Length averages around 6 inches. Cross section quite round almost double-barrelled. Somewhat affected by disease. Ripe pods fairly easy to shell.

Adaptation.—Well suited to growing in the home and market garden.



WEBBER WAX
(Background $\frac{1}{20}$ of an inch)

WEBBER WAX

Synonyms.—Cracker Jack Wax, New Webber Wax, Webber Butter Wax, Webber Wax or Cracker Jack.

Seed Characters.—The seed coat is pale yellow, finely veined, oblong in shape, ends rounded, occasionally truncated, full at the eye with a distinct reddish brown circle around the hilum, sometimes extending as a line over one end. Sulphur-like smudging is also quite common on the seed coat. In cross section the seeds are almost round. The average dimensions of the seeds are $1\frac{7}{32} \times \frac{9}{32} \times \frac{7}{32}$ of an inch.

Season.—A splendid main crop variety but of rather short season.

Plant.—Medium size, 12 inches high, erect. The stems are short, stout, yellowish green. Leaflets medium to large, thin, fairly smooth, pale green.

Flowers.—The flowers are pink, medium size, in small clusters, half hidden in the foliage.

Fruiting Habit.—The pods set quite abundantly in pairs in loose clusters inside the foliage well off the ground, averaging 6 inches in length, flat to somewhat oval, curved slightly backward, waxy yellow with green tinge at stem and point. Surface smooth. Suture dark. Walls of pods thin, rather dry, brittle, with little fibre. Almost stringless.

Adaptation.—Suitable for Market and Home Garden.



FLAGEOLET WAX

(Background, margin, $\frac{1}{20}$ of an inch)

FLAGEOLET WAX

Synonyms.—Flageolet Wax Violet or Perfection Wax, Giant Dwarf Wax, Giant Red Wax, Landreth Scarlet, Long Pod Wax, McKenzie Perfection, Midsummer, Perfection Dwarf Wax, Perfection Wax, Purple Flageolet, Red Flageolet, Red German, Rennie Stringless Wax, Scarlet Flageolet, Simmer Extra Early Giant, Sure Crop Stringless Wax, Violet Flageolet or Perfection Wax, Violet Flageolet Wax.

Seed Characters.—The seed coat varies in colour from scarlet, dark red, purple to seal-brown with a slight shading of purple, the darker shades developing in the late stages of maturity. The shape is semi-kidney, ends rounded, frequently truncated, in cross-section flat oval, measuring $2\frac{1}{32}$ x $1\frac{0}{32}$ x $\frac{7}{32}$ of an inch.

Season.—Midseason to late.

Plant.—In size the plants are large, erect, averaging 16 inches high. Stems short, stout, green. Leaflets medium to large, coarse, medium thick somewhat rough, medium green in colour.

Flowers.—The flowers are pink, medium sized, in pairs in medium sized clusters, well hidden by the foliage.

Fruiting Habit.—The pods are produced quite abundantly in pairs in loose clusters, protected by the foliage, well above the ground, averaging $6\frac{1}{2}$ inches long, slightly curved, broad, flatly-ovaled, stout. Walls thin, much fibre, rather dry, tough, very stringy when old. Colour, deep, yellow. Surface smooth. Point well defined, long, green, curving backward and forward. Suture dark, fairly distinct.

Adaptation.—This is a variety that could be used for long distance shipping since the pods remain attractive for a considerable time. The strains are, however, very variable; in fact, some strains will contain seed with seed coat colouring of a great variety of shades. The following types should not be confused with Flageolet Wax: Green Flageolet, White Flageolet and French Flageolet since they have been found to be quite distinct types.



* HODSON WAX
(Background $\frac{1}{40}$ of an inch)

*HODSON WAX

Synonyms.—Golden Queen, Golden Queen or Hodson Wax, Golden Queen or Rust Proof, Hodson Long Pod, Hodson Long Podded Wax, Hodson Wax or Golden Queen, Hodson Wax Long Pod, New Hodson Wax.

Seed Character.—The seed coat is of a purplish red shade with quite free splashing of buff. In shape the seeds are oblong roundly oval in cross section slightly kidney shape but mostly straight at the eye. Ends rounded, occasionally slightly truncated. They measure $1\frac{9}{32} \times \frac{9}{32} \times \frac{8}{32}$ of an inch. In shape seeds quite closely resemble Early Red Valentine but are somewhat longer and larger.

Season.—A late maturing variety.

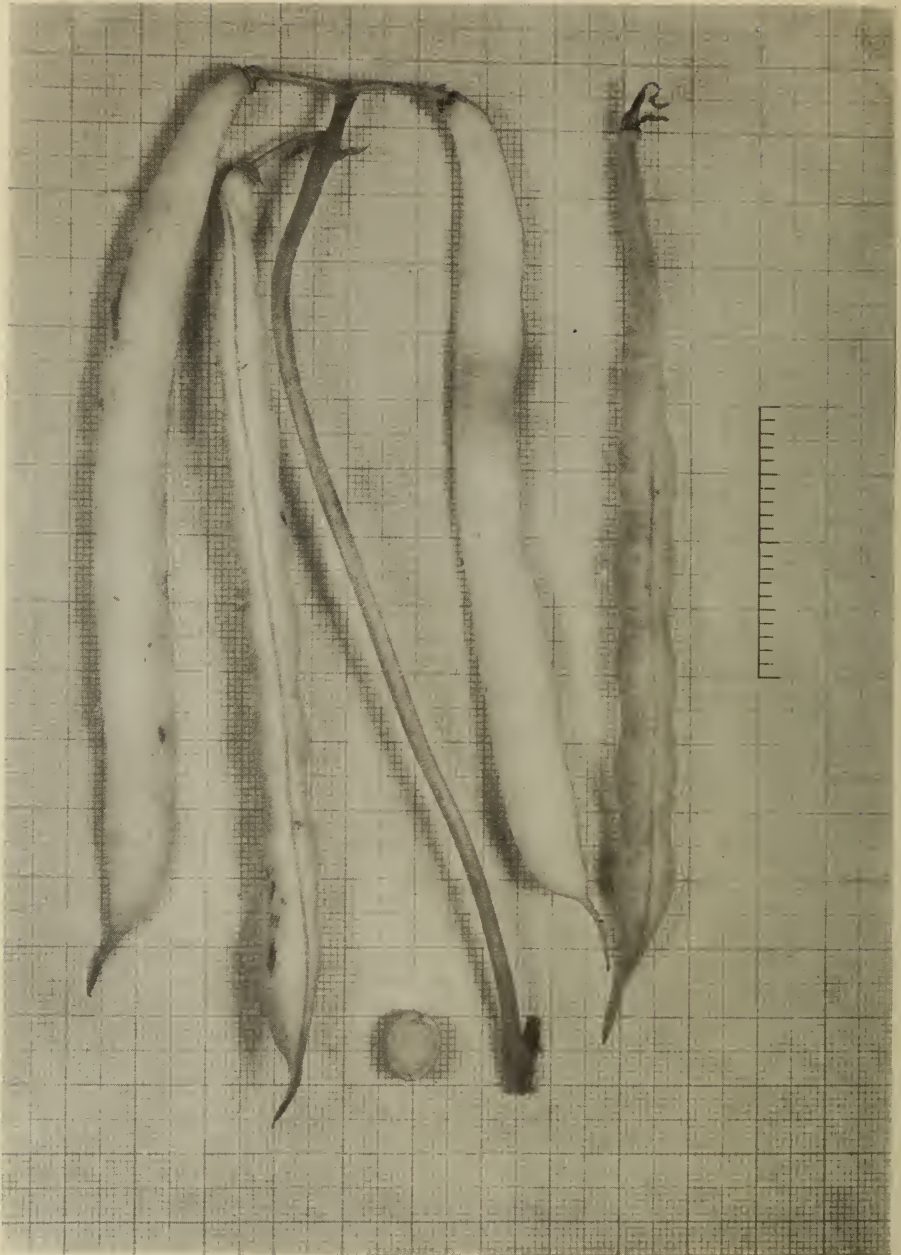
Plant.—The plants are quite large, upright when young, drooping in a spreading fashion when loaded with pods, develop occasional semi-runners. The plant proper grows to a height of 16 inches. The branches are slender, pale green. Leaflets medium size, somewhat narrowed, long pointed, thin, slightly rough, pale green.

Flowers.—These are pale pink, medium to small in size, produced in pairs in medium sized clusters half hidden in the foliage.

Fruiting Habit.—The pods are very uniform, produced in pairs in numerous small sized loose clusters. They average $7\frac{1}{4}$ inches long. Shape slender or narrow flat-oval, straight or slightly curved backwards, medium to pale yellow. Free of stringiness when young, very stringy when old, fibrous, tough, dwarf, Point usually long, straight, sometimes curved. Easy to thresh when pods are dry. Very free from anthracnose.

Adaptation.—A suitable variety for canning, for shipping a long distance and to be used as a late maturing variety.

Green Podded Varieties



* BOUNTIFUL
(Background $\frac{1}{2}$ of an inch)

*BOUNTIFUL

Synonyms.—Beck Boston Snap, Bountiful French, Bountiful Green Bush, Bountiful Green Pod, Bountiful or Improved Six Weeks, Bountiful Stringless, Early Bountiful, Extra Early Bountiful, Henderson Bountiful, New Bountiful, Sure Crop Stringless or Bountiful, Sutton Plentiful, Yellow Six Weeks.

Seed Character.—The seed coat is a solid straw yellow in colour with a coppery smudging on some of the seeds. In shape they are elongated, broad, straight or slightly depressed at the eye, with a brown circle around the eye. In cross section are round oval, with rounded ends occasionally truncated. The average dimensions are $1\frac{1}{32}$ x $1\frac{1}{32}$ x $\frac{8}{32}$ of an inch.

Season.—Early maturing.

Plant.—The plants are medium to large in size averaging 16 inches high, strong, upright when young but spreading or drooping when fully developed. Stems quite stout, light green. Leaflets medium in size, medium to thick, moderately rough, light green.

Flowers.—Pale pink, medium in size, single and in pairs, half hidden in the foliage.

Fruiting Habit.—The pods are in clusters of medium size quite loose, well distributed throughout the plant. The pods are at first well above the ground but later drooping, range between 6 and $6\frac{1}{2}$ inches long, medium to stout, flat, sometimes curved near the tip. The point is very long and well defined, sometimes curved. The pods are light to pale green, stringless, smooth, not immune to disease with a distinct dark suture.

Fruiting Habit.—Fairly fleshy, brittle when young with some fibre. In condition for a long time after picking.

Adaptation.—A good variety for long distance shipping.



* MASTERPIECE
(Background $\frac{1}{16}$ of an inch)

*MASTERPIECE

Synonyms.—Glory of St. Andrews, Masterpiece or St. Andrews, Sutton Masterpiece.

Seed Character.—The seed coat is solid straw yellow colour with slight smudging of sulphur over the ends and sides with a distinct coppery ring around the eye. In shape they are slender, elongated, flattened in cross section, decidedly kidney shape, depressed at the eye, ends sharply rounded. The average dimensions are $2\frac{1}{32}$ x $1\frac{10}{32}$ x $\frac{7}{32}$ of an inch.

Season.—Early maturing.

Plant.—The plants are large in size, quite erect, strong, averaging 16 inches high, plants droop slightly when loaded with pods. Stems quite stout, pale green. Leaflets large, medium to dark green, thin, smooth, fairly immune to disease.

Flowers.—The flowers are produced in pairs in medium sized clusters, pale pink, medium in size half hidden in the foliage.

Fruiting Habit.—The pods are produced in large clusters, quite compact, in pairs mostly in the centre of the plant, well above the ground. Pale green, slender, flat, quite straight, surface slightly roughened, suture darker green averaging 7 inches long. Point long, straight, slender. Tender when very young, walls medium in thickness, fairly fleshy and almost stringless, developing a decided strong string toward maturity. Season of usefulness is quite long.

Adaptation.—A very satisfactory green podded variety for early market and suitable for forcing.



* EARLY RED VALENTINE

(Background $\frac{1}{20}$ of an inch)

*EARLY RED VALENTINE

Synonyms.—Bolgiano Earliest Red Valentine, Earliest Improved Valentine, Earliest Red Valentine, Early Lightning Valentine, Early Round Pod Red Valentine, Early Speckled Red Valentine, Early Wonder, Early Wonder Bush, Extra Early Red Valentine, Extra Early Round Podded Red Valentine, Extra Early Tender Valentine, Improved Extra Early Red Valentine, Improved Earliest Red Valentine, Improved Early Red Valentine, Improved Early Valentine, Improved Red Speckled Valentine, Improved Red Valentine, Improved Round Pod Valentine, Kilgore Stringless Valentine, Lightning Early Red Valentine, Lightning Valentine, Red Valentine, Red Valentine Extra Early Round Pod, Red Valentine Improved, Round Pod Valentine, Valentine Extra Early, Valentine Improved Early Red.

Seed Characters.—The seed coat is mottled with fawn and deep red, the red being the major colour. In shape they are elongated, circular in cross section, slightly truncated at one or both ends, sometimes depressed slightly but usually full or straight at the eye. The dimensions are $1\frac{1}{32}$ x $1\frac{1}{32}$ x $\frac{3}{32}$ of an inch.

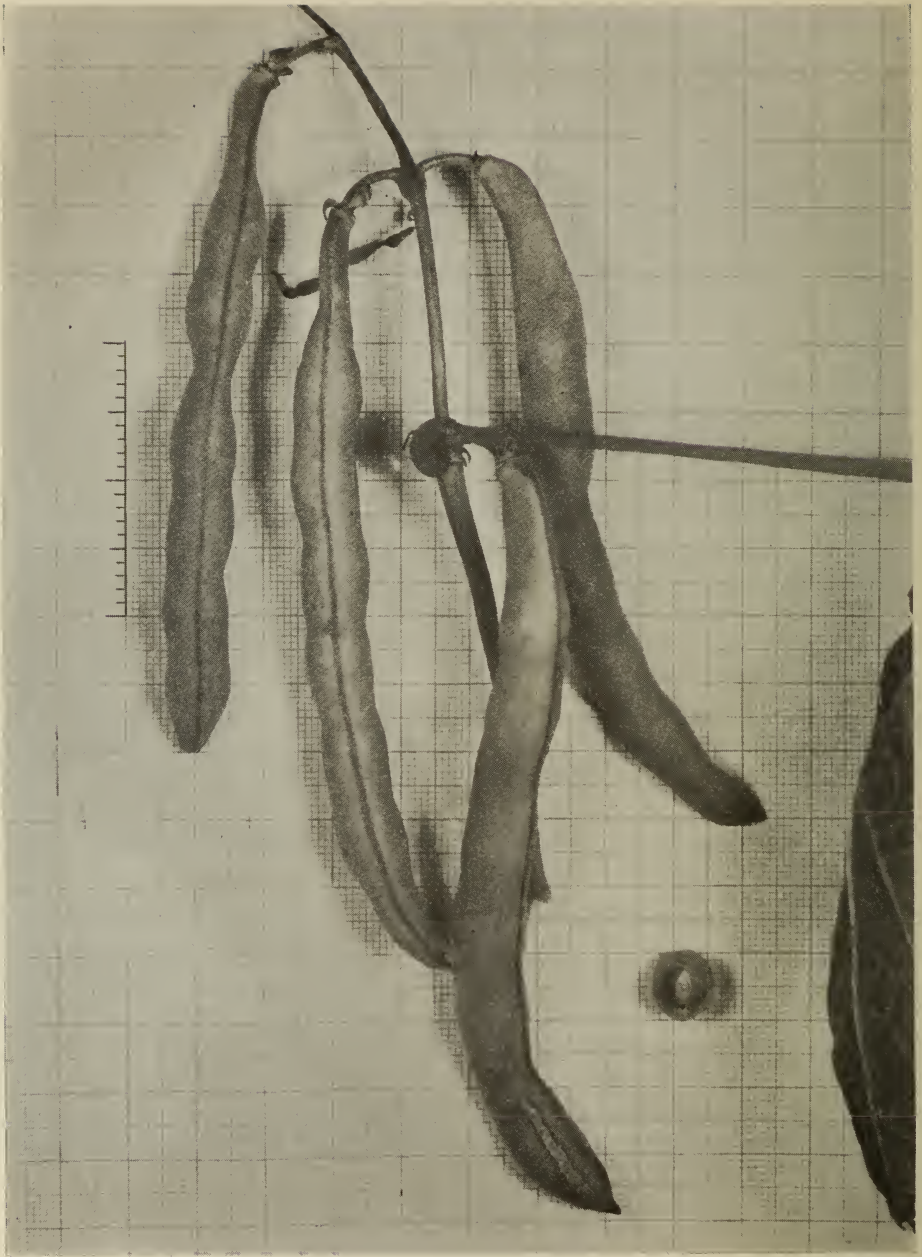
Season.—Early maturing, 60 days from planting to ready for use as green or snap pods.

Plant.—This is a very erect compact type of plant quite free from disease, hardy, vigorous, ranging around 14 inches high. Stems medium in length, slender, green, very productive. Leaflets medium in size, fairly thick, almost smooth, medium green.

Flowers.—White, medium to small sized, mostly in pairs or in clusters of 3 to 5 half hidden by the foliage.

Fruiting Habit.—The pods set quite well, mostly in pairs, clusters fairly compact borne well above the ground. Average length of pods $4\frac{1}{2}$ inches, slender, smooth surface. Colour attractive green. Shape, curved backward, roundly broad in cross section, suture distinct, dark, crease-backed. Point long slender, curved backward and slightly forward again, medium green, brittle. Walls thick, fleshy, tender, attractive, slightly stringy when young, little fibre.

Adaptation.—On account of retaining a good appearance for a considerable time and possessing good quality it is a good shipper. For canning and pickling this should be a very desirable sort.



* STRINGLESS GREEN POD
(Background $\frac{1}{20}$ of an inch)

*STRINGLESS GREEN POD

Synonyms.—Bell Prolific Green Pod, Burpee Green Pod Stringless, Burpee New Stringless, Burpee Stringless, Burpee Stringless Green Pod, Canadian Glory, Green Pod Stringless, Improved Stringless Green Pod, McKenzie Matchless, Mizzy Stringless Green Pod, New Stringless (Burpee) New Stringless Green Pod, Schultz Stringless Green Pod, Stringless, Stringless Forcer, Stringless Green Round Pod, Stringless Wonder, XXX Bush Green Pod.

Seed Character.—The seed coat is a quite dark chocolate, coffee or umber brown, with a darker ring around the hilum or eye, occasionally a piece of silvering adheres to the eye. In shape they are oblong-oval, full at the eye, very frequently truncated. In cross section are quite rounded. The dimensions are $1\frac{1}{32} \times 1\frac{10}{32} \times \frac{9}{32}$ of an inch.

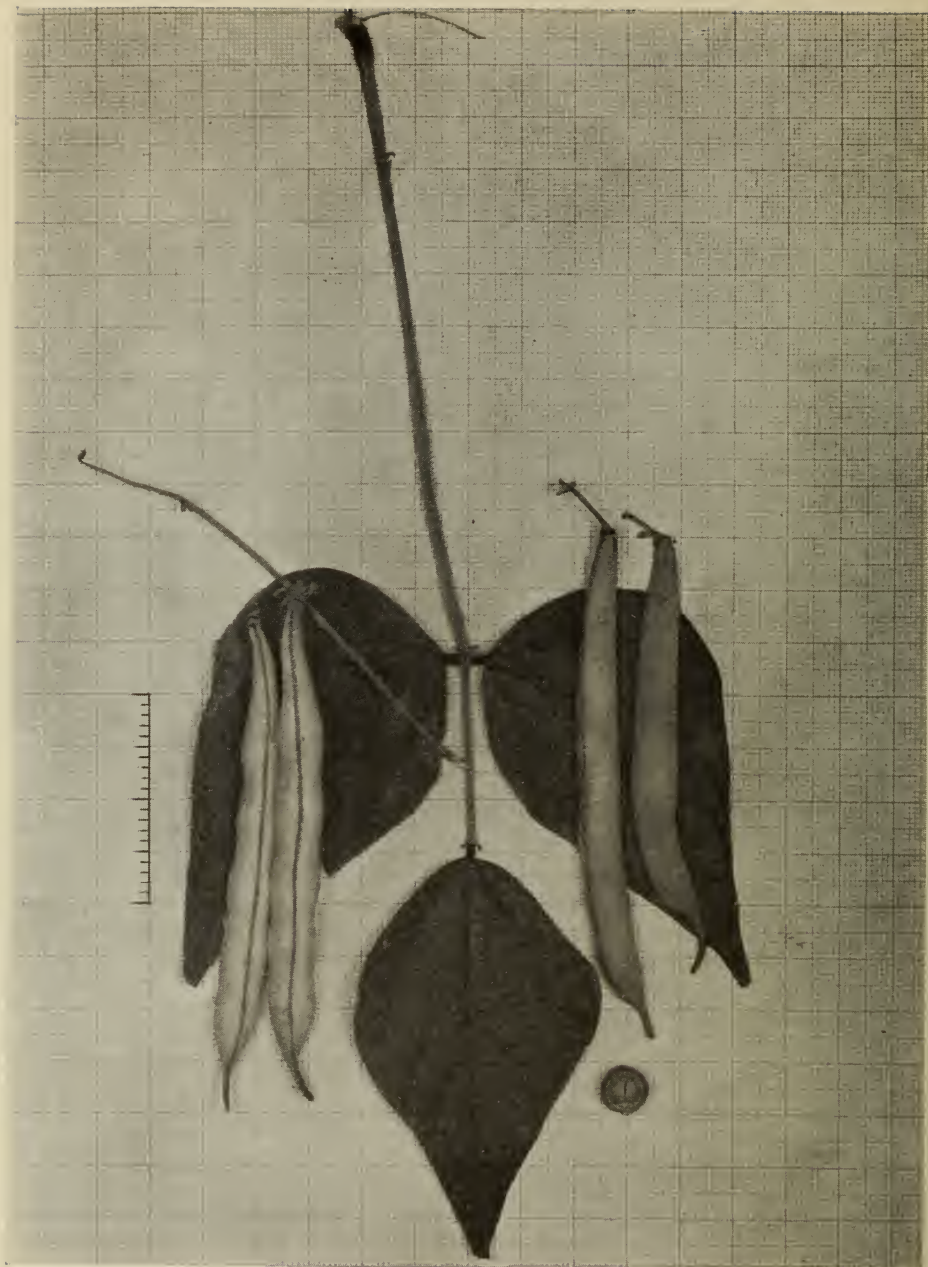
Season.—Early maturing.

Plant.—Medium large in size averaging 15 inches high, erect when young, drooping or spreading when loaded. Stems, stout, light green. Leaflets medium to large in size, moderately thick, somewhat roughened to rough. Colour medium green, occasionally a branch juts out above the contour of the plant. Quite susceptible to disease.

Flowers.—The flowers are pale pink, medium size, in pairs, clusters small, half hidden in the foliage.

Fruiting Habit.—The pods set well over an extended season, mostly in pairs, in small clusters that are quite loose, distributed throughout the plant, very frequently resting on the ground. The snap pods vary in shape from curved backwards to bent and twisted sideways, decidedly creasebacked, absolutely stringless, stout, smooth surface. In cross section decidedly round double-barrelled. Walls thick, fleshy, very brittle with absence of fibre. Suture distinct being darker. Point poorly defined, blunt. Ripe pods are constricted deeply between the seeds incasing each seed very closely, difficult to thresh.

Adaptation.—An excellent variety of high quality for local market and home garden.



* STRINGLESS REFUGEE
(Background $\frac{1}{20}$ of an inch)

*STRINGLESS REFUGEE

Synonyms.—Refugee (1000 to 1), Refugee Stringless (Rogers), Rogers Improved Stringless Refugee, Stringless Green Pod Refugee.

Seed Character.—In colour the seed coat is buff overshadowed with dense purple mottling, the buff is smudged also with purple. In shape the seeds are slender, elongated, straight at the eye, round to oval in cross section, ends truncated, sometimes rounded. The dimensions are $1\frac{7}{32} \times \frac{9}{32} \times \frac{7}{32}$ of an inch.

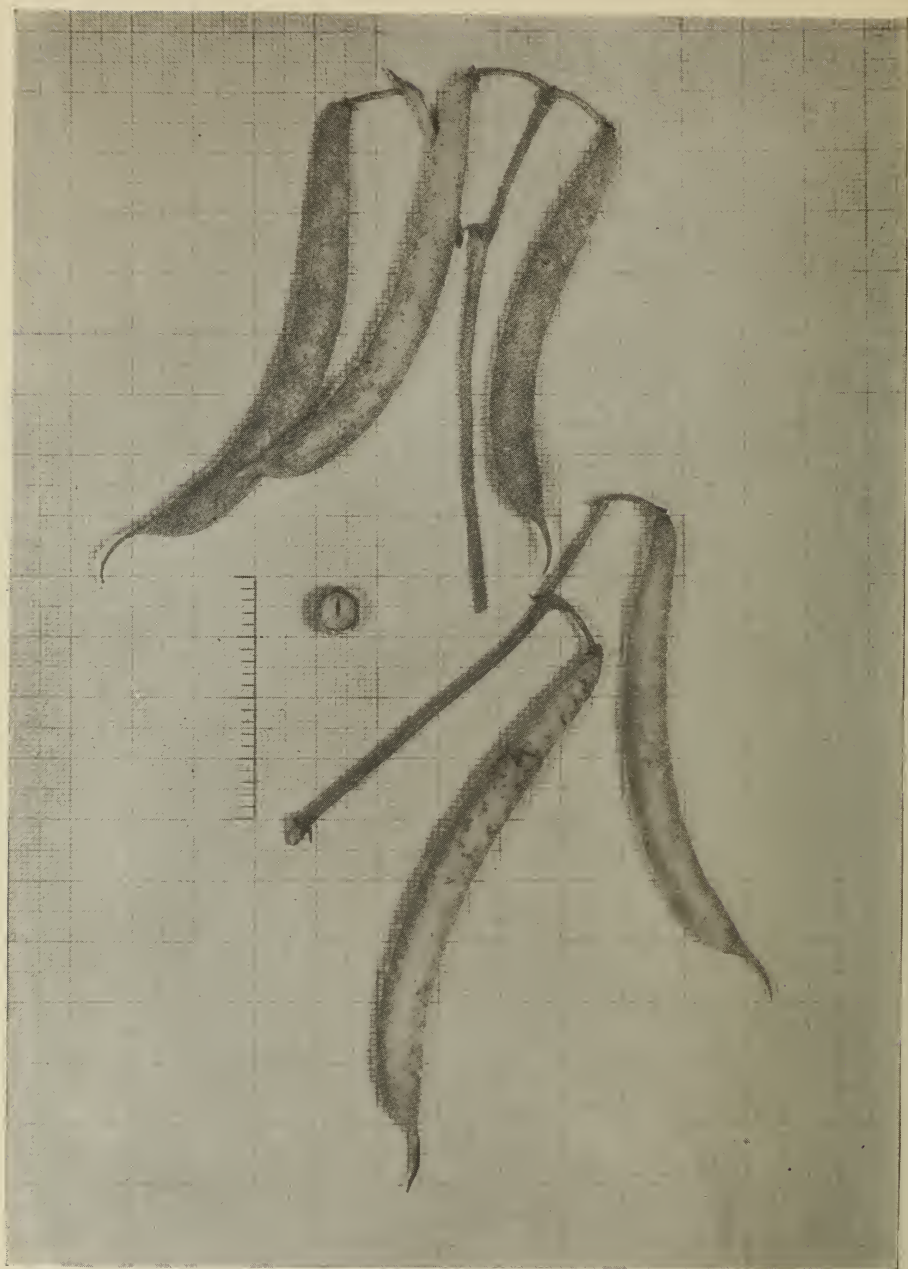
Season.—This is a particularly late maturing variety requiring 70 days from planting to ready for use as green snap pods.

Plant.—Large, spreading in habit, semi-tendrill or trailing on the ground, branches slender, green throughout. Leaflets numerous, small or medium in size, elongate-pointed, thin, flat, smooth. Colour, pale green. Petiole long, slender. Quite free from disease.

Flowers.—The flowers are pink, produced in medium sized clusters mostly in pairs, half hidden in the foliage.

Fruiting Habit.—The pods set well over a long season, in medium sized loose clusters, mostly in pairs often resting on the ground. The length ranges between 4 and 5 inches, slightly curved back, attractive light green, quite well rounded in cross section, surface smooth. Point quite long, slender, curved backwards, sometimes straight. Stringless, very little fibre, fine grained, good quality. Towards maturity considerable purpling appears on the pods. This is a decided improvement on Refugee (1000 to 1) from which it was selected. The chief difference between this and the former is the absence of stringiness in the pods.

Adaptation.—A splendid canning variety for which purpose it is used very extensively.



REFUGEE (1000 to 1)
(Background $\frac{1}{20}$ of an inch)

REFUGEE (1000 TO 1)

Synonyms.—Brown Speckled Valentine, Improved Refugee, Improved Round Pod Refugee, Late Refugee, Late Refugee or 1000 to 1, One Thousand to One, Round Pod Refugee, Round Pod Refugee or 1000 to 1, Thousand to One, True Refugee.

Seed Character.—In colour the seed coat is buff, over shaded with dense purple mottling. The buff is also smudged with purple. The shape of the seeds is slender elongated, straight at the eye, round to oval in cross section, ends truncated sometimes rounded. The dimensions are $1\frac{7}{32}$ x $\frac{9}{32}$ x $\frac{7}{32}$ of an inch.

Season.—Particularly late, requiring at least 70 days from planting to ready for use as snap pods.

Plant.—Large, spreading in habit, semi-tendrill or trailing on the ground, branches slender, green throughout. Leaflets numerous, small or medium in size elongate-pointed, thin, flat, smooth, pale green in colour. Petiole long, slender. Moderately free from disease.

Flowers.—These are pink, produced in medium sized clusters mostly in pairs, half hidden in the foliage.

Fruiting Habit.—The pods set well over a long season, in medium sized loose clusters, mostly in pairs, often resting on the ground. The length ranges between 4 and 5 inches, slightly curved back, attractive light green, quite well rounded in cross section, surface smooth. Point quite slender curved backwards sometimes straight. Slightly stringy at all stages, very little fibre, fine grained, good quality. Towards maturity the pods are splashed with purple.

Adaptation.—Chiefly used for canning, pickling, shipping or for late green snap pods.

Broad Bean Varieties

Vicia Faba L.



*LONG POD HANGDOWN
(Background $\frac{1}{20}$ of an inch)

***LONG POD HANGDOWN**

Synonyms.—None.

Seed Character.—The dry seed is a light leather brown in colour when first matured, changing to a darker shade or light coffee colour.

The shape varies within a fairly constant range being flatly wedged, depressed, shrunk on the cotyledon sides and oblong oval on the dorsal and ventral edges from the squared hilum end, measuring $2\frac{5}{32}$ x $1\frac{8}{32}$ x $\frac{7}{32}$ of an inch. The eye is dark, narrow, elongated and indented. The size of the seed varies somewhat with the position in the pod.

Season.—This variety requires a long season wherein to mature.

Plant.—Is very erect, growing to a height of forty-one inches, stooling, not branching, stems quadrangular, hollow, slightly lined longitudinally. Leaflets medium in size, deep green, glabrous, glaucous, moderately thick. Subject to aphid and disease.

Flowers.—The flowers are produced in the axils of the leaves, mostly in pairs, sometimes in larger clusters of pairs. The first flowers are as a rule borne between the sixth and eighth leaf from the ground. White, blotched with black, oblong in shape.

Fruiting Habit.—The pods range from five to seven inches long, stout, flat, thick, medium pale green outside, with a thick layer of felt-like padding inside the pod between the pod wall and the seed. When ripe the pods turn black becoming tough but easy to shell.



* BROAD WINDSOR
(Background $\frac{1}{2}$ of an inch)

*BROAD WINDSOR

Synonyms.—Giant Windsor, Harlington Windsor, Mammoth Broad Windsor, Taylor Windsor, White Windsor.

Seed Characters.—The dry seeds are light leather brown when first ripe changing to a light coffee brown when seasoned. The edge shape is quite circular to oval, regularly flattened at the hilum, slightly indented at the radical. Sides flatly undulated, slightly wedge shape from the hilum to the opposite edge, measuring $3\frac{1}{32} \times 2\frac{9}{32} \times \frac{9}{32}$ of an inch to $1\frac{1}{32} \times 2\frac{7}{32} \times 1\frac{1}{32}$ of an inch which shows a variation from almost circular to oval.

Season.—Requires a fairly long season therefore must be classed as midseason to late.

Plant.—The plants are very erect, growing to a height of forty-five inches, sometimes stooling. Stems stout, quadrangular, pale green. Leaflets very large, thick, smooth, quite dark green, glaucous. Aphis and disease are troublesome.

Flowers.—Medium to large in size, borne in the axils of the leaves in clusters mostly in pairs, oblong in shape, the first is usually borne above the seventh leaf from the ground, being white with dark markings.

Fruiting Habit.—The pods range from $4\frac{1}{2}$ to 5 inches long, $1\frac{1}{2}$ inches broad, exceedingly stout, depressed slightly between seeds, pale green, smooth surface. Point short, thick, curled. Pod walls thick inside lined with felt-like mass between the seeds. Seeds pale green to cream, large, flat, broad, usually from 2 to 4 in each pod, usually quite free but occasionally crowded. Seed coat thick, somewhat tough, hilum dark, narrow elongated. At maturity the spongy felt surrounding the seeds disappears. The outside of the pods turn black and the pod becomes leathery. Easy to shell.

Adaptation.—An excellent variety for green shell beans, requiring a cool season for proper development.

Dwarf Lima Varieties

Phaseolus lunatus L. (Sieva or small Lima)

AND

Phaseolus limensis var. *limenanus* (Bush. lima)



BUSH LIMA (HENDERSON)
(Background $\frac{1}{10}$ of an inch)

BUSH LIMA (HENDERSON)

Phaseolus lunatus L. (Sieva or small Lima)

Synonyms.—Bush Lima (Henderson), Carolina Bush Lima, Dwarf Bush or Baby Lima, Dwarf Carolina, Dwarf Sieva, Earliest Bush Lima, Henderson Bush Lima, Improved Bush Lima (Henderson), Kelsey Bush, Sieva Bush Lima, Small White Bush Lima.

Seed Character.—The seed coat is creamy white, with very fine lines, veining or fluting, radiating from the hilum. Shape, straight to bulging on the dorsal or hilum side, with eye full to protruding; ends roundly sloping, occasionally truncated, with radical-end narrowed, the ventral side roundly broadened two-thirds of the length of the seed, with the end broadly-rounded, sloping, somewhat triangle-like with the corners rounded off. In size the dry seeds are small measuring $1\frac{4}{32} \times 1\frac{0}{32} \times \frac{2}{32}$ of an inch.

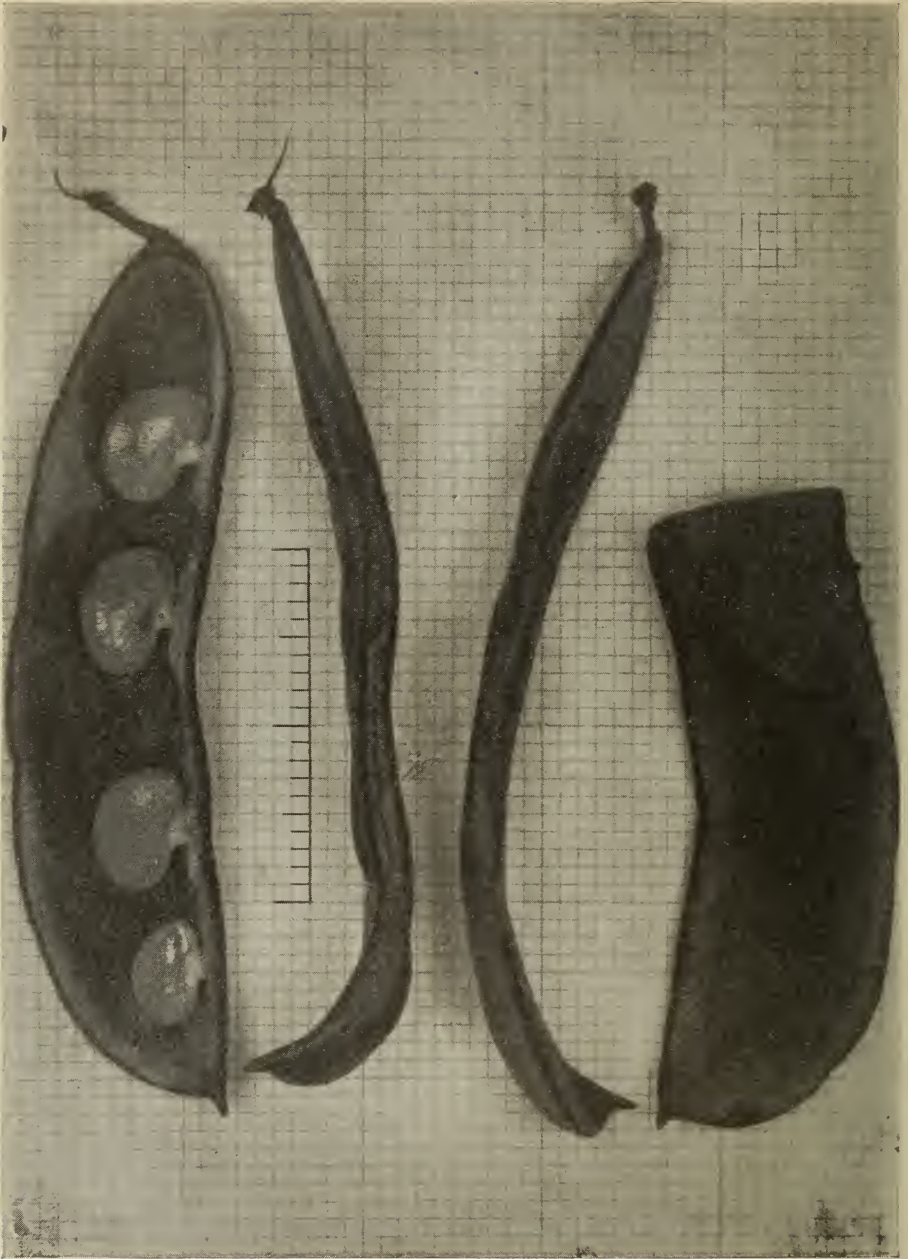
Season.—Early maturing with an extended season of bearing.

Plant.—Dwarf in habit, small, compactly bushy, quite erect, from 10 to 12 inches high, stems medium in size, pale green. Leaflets small, thin, smooth, broad at base, elongated, triangular, sharply pointed, moderate dark green, quite glossy. Free from disease.

Flowers.—These are greenish white, small in size, produced in pairs in large clusters. The flowering stems are long, slender, drooping, mostly hidden below the foliage.

Fruiting Habit.—The pods set well, in medium to large sized loose clusters. The size ranges from 3 to occasionally 4 inches long, $\frac{3}{32}$ of an inch wide and $\frac{1}{32}$ of an inch thick, mostly three seeds in each pod. Narrow at the stem end. Scimitar-shaped, terminating in a short sharp point, jutting backwards. Surface smooth, dark green, with light green margin.

Adaptation.—An ideal variety for canning, for the home garden and on account of its hardiness and early maturing is adapted to cooler conditions than the other varieties.



BURPEE IMPROVED BUSH LIMA

(Background $\frac{1}{10}$ of an inch)

BURPEE IMPROVED BUSH LIMA

Phaseolus limensis var. *limenanus* (Bush. lima)

Synonyms.—Burpee Bush, Burpee Large Bush, Dwarf Large Lima, Elliot Bush Lima, Large White Bush Lima, Mammoth Bush Lima, Willett Bush Lima.

Seed Character.—The seed coat is creamy white with greenish veining radiating from the hilum. Shape slightly kidney like, indented at the hilum or dorsal side, ends rounded unequally with the radical end narrowed, sides somewhat flattened to indented and occasionally slightly twisted. Size medium to large measuring $2\frac{8}{32} \times 1\frac{9}{32} \times \frac{8}{32}$ of an inch.

Season.—Medium early to second early requiring a much longer season to mature than Improved Bush Lima (Henderson).

Plant.—Quite strong growing, upright to slightly spreading, with occasional twiners. Stems pale green, fairly stout. Leaflets, medium in size, elongated to broadly lanceolate, thin slightly rough or pubescent, colour medium to deep glossy green.

Flowers.—The flowers are produced in quite large, medium to compact clusters, greenish white, medium to small in size. Flower stems long, mostly upright, sometimes drooping. The bloom sometimes shows above the foliage.

Fruiting Habit.—The pods set freely in medium to large clusters, mostly in pairs, ranging around 4 to $4-1\frac{1}{32}$ inches long, $1-\frac{2}{32}$ wide and $1\frac{2}{32}$ of an inch thick, shape slightly curved backwards, curved and twisted sideways occasionally straight. Point very short, indistinct, surface almost smooth, colour dark green with light shading along the edges. Mostly four seeded. Green shell beans are large, plump greenish white.

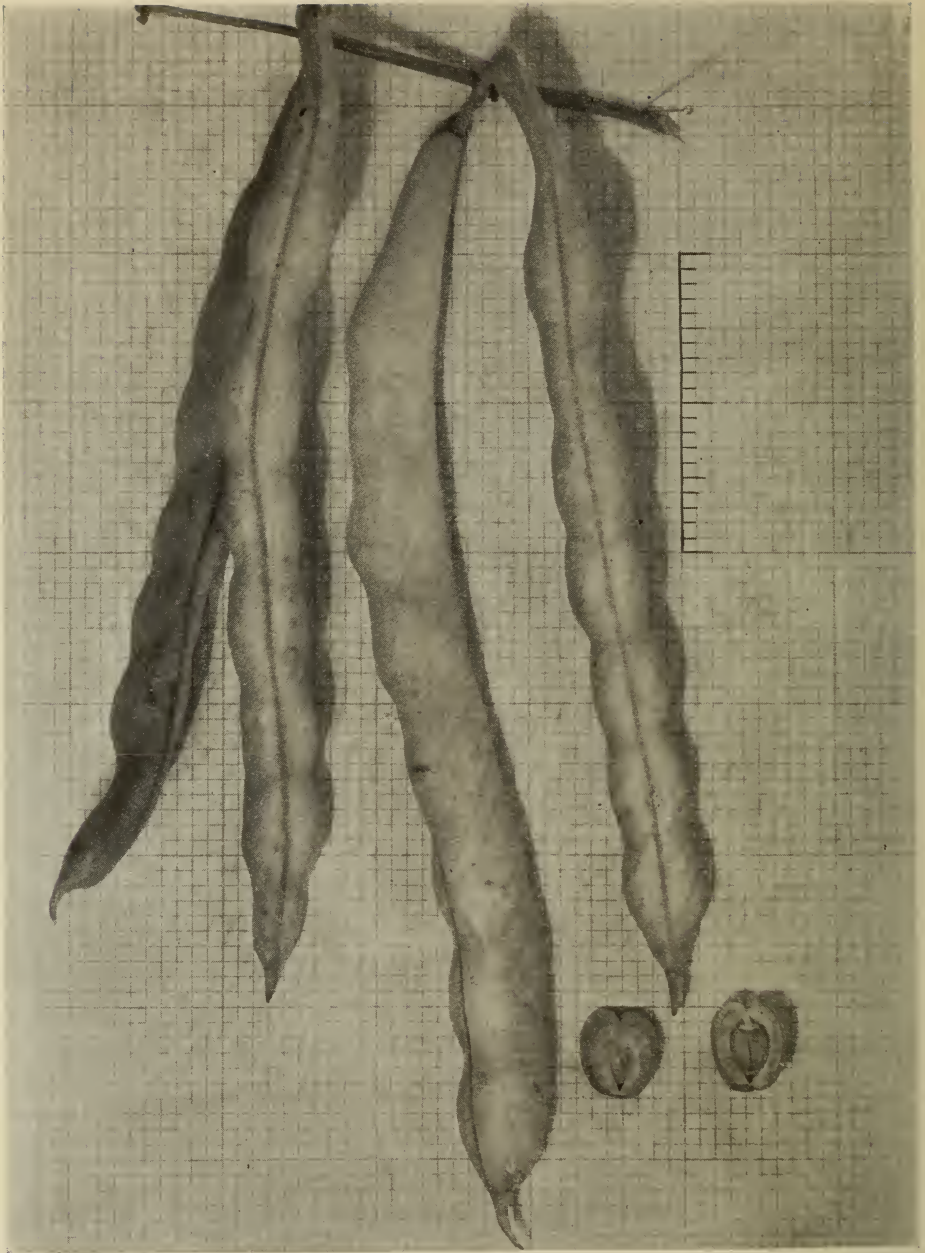
Adaptation.—A splendid market garden and home garden variety where seasonal conditions are favourable.

Pole Varieties

Phaseolus vulgaris

Runner Varieties

Phaseolus coccineus



*KENTUCKY WONDER WAX
(Background $\frac{1}{10}$ of an inch)

*KENTUCKY WONDER WAX

Phaseolus vulgaris

Synonyms.—Golden Podded Kentucky Wax, Ohio Wax Pole, Old Homestead Wax, Prosperity, Prosperity Wax Pole, Salzer Prosperity Wax Pole, Schwill Wonderful, Schwill Wonderful Wax Pole, Texas Prolific Wax, Yellow Pod Old Homesteader.

Seed Character.—The seed coat is solid dark brown or maroon brown glossy, shape elongated, somewhat kidney like, bent and twisted sideways, radical end slightly truncated, enlarged, with the opposite end rounded. In cross section flat oval wedged. The eye is slightly depressed, frequently flattened. The seeds measure $1\frac{9}{32}$ x $1\frac{1}{32}$ x $\frac{1}{32}$ of an inch.

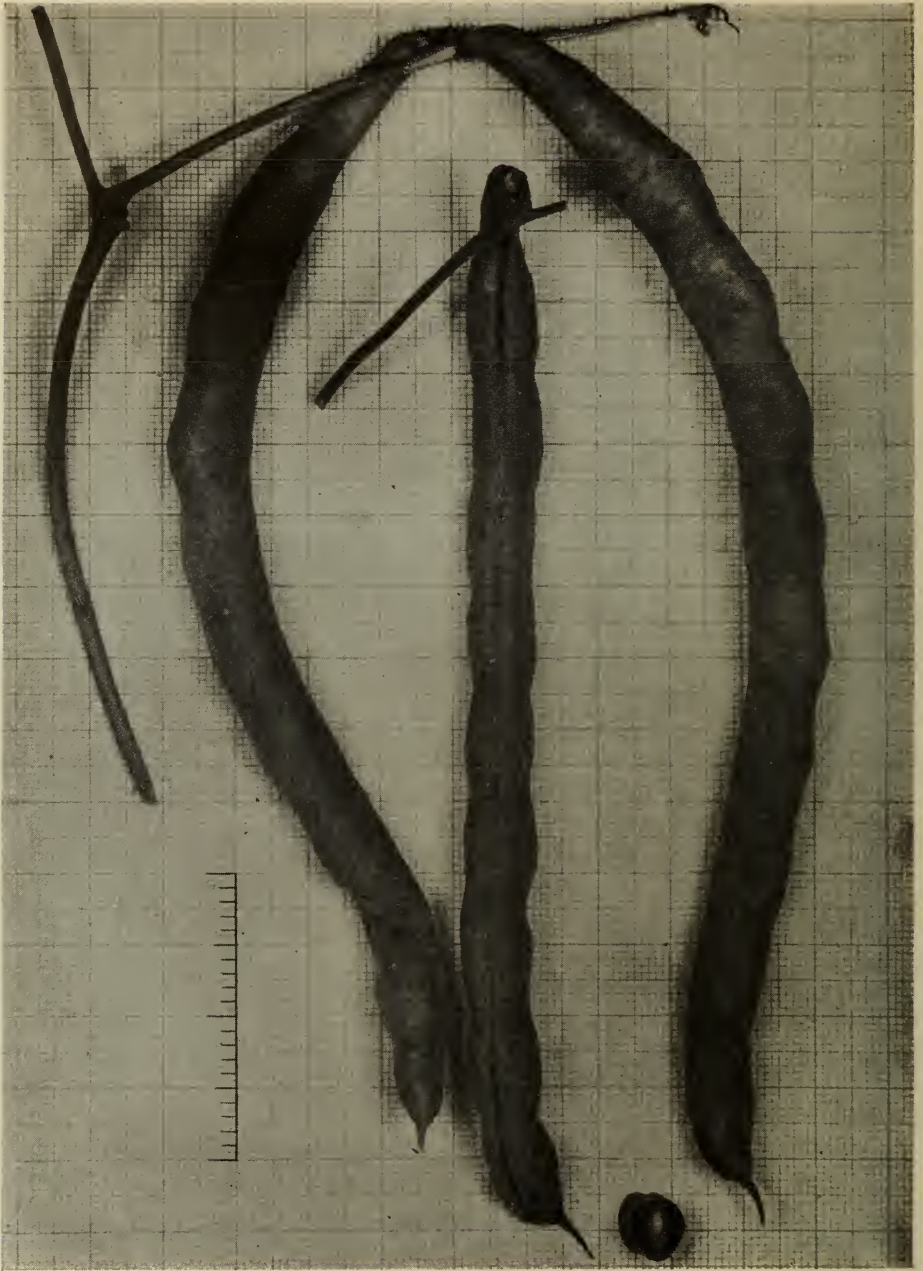
Season.—Early maturing.

Plant.—Moderately strong grower, true climber growing to a height of nine feet, stout stem, pale green. Leaves medium sized, moderately thick, medium to pale green surface somewhat rough.

Flowers.—White, medium sized, in pairs on fairly stout 4 to 5 inch stems arising from the axil of the leaves up the main stem.

Fruiting Habit.—The pods set very well, mostly in pairs, surface rough undulating, colour waxy yellow, deeply crease-backed, suture distinct, curved slightly back and forward, deeply constricted between seeds. Seeds arranged alternately from side to side giving an irregular pod. Point tapering with a stout blunt tip. Snap pods very tender, brittle, almost stringless, very fleshy walls, with little fibre, quite round in cross section averaging $7\frac{8}{32}$ long by $1\frac{8}{32}$ wide by $1\frac{8}{32}$ of an inch thick, containing from 6 to 10 seeds, that are quite well separated in the pods. As the pods mature they become streaked or washed with red or carmine. Dry pods thresh quite easily. Quite free from disease.

Adaptation.—Suitable for market and home garden.



* KENTUCKY WONDER GREEN POD
(Background $\frac{1}{32}$ of an inch)

***KENTUCKY WONDER GREEN POD**

Phaseolus vulgaris

Synonyms.—American Sickle, American Sickle Pole, Archiaa Improved Kentucky Wonder Pole, Eastern Wonder, Eastern Wonder Pole, Georgia Monstrous, Georgia Monstrous Pole, Gray Seeded Kentucky Wonder, Green Kentucky Wonder or Old Homestead, Improved Kentucky Wonder, Improved Kentucky Wonder Pole, Improved Old Homestead, Kentucky Wonder, Kentucky Wonder Golden Pod, Kentucky Wonder or Old Homestead, Kentucky Wonder Pole, Monstrous Podded Southern Prolific, Monstrous Podded Southern Prolific Pole, Old Homestead, Old Homestead (Green Kentucky Wonder), Old Homestead or Kentucky Wonder, Old Homestead Pole, Seek-no-Further, Superior Kentucky Wonder, Texas Prolific, Texas Prolific Pole.

Seed Character.—The seed coat is drab-brown often with veining of darker brown; shape elongate, almost kidney shape, twisted and bent sideways, ends rounded with the radical end sometimes angled off. In cross section flatly oval. The eye is usually indented evenly sometimes twisted to one side. A reddish ring incircles the eye. The seeds measure $2\frac{1}{32}$ x $1\frac{9}{32}$ x $\frac{7}{32}$ of an inch.

Season.—For the pole varieties this is considered the standard, of earliness.

Plant.—Strong to medium strong, true climber, growing to a height of eight feet; stems medium in size. Leaves medium sized, moderately thick, pale green.

Flowers.—White, medium sized, in pairs on stems $4\frac{1}{2}$ to 6 inches long arising from the vine at the juncture of the leaves.

Fruiting Habit.—The pods set quite freely, mostly in pairs, surface rough, undulating, colour pale green deeply crease-backed, suture conspicuous, bent toward ventral side at stem end again but somewhat to the dorsal or suture side near the tip, somewhat scimitar like, constricted between the seeds. Seeds arranged alternately from side to side giving an irregular pod. Point tapering with a stout blunt tip. Snap pods very tender, brittle, almost stringless, very fleshy walls with very little fibre, quite round in cross section, averaging $8\frac{16}{32}$ inches long $1\frac{8}{32}$ wide by $\frac{16}{32}$ of an inch thick containing from 8 to 10 seeds well separated in the pods. As the pods ripen the surface is washed or streaked with red or carmine. Dry pods thresh easily. Quite free from disease.

Adaptation.—Suitable for market and home garden.



* GOLDEN CLUSTER WAX
(Background $\frac{1}{16}$ of an inch)

***GOLDEN CLUSTER WAX**

Phaseolus vulgaris

Synonyms.—Dreer Golden Cluster Wax, Early Golden Cluster, Early Golden Cluster Wax Pole, Golden Cluster Pole, White Algerian.

Seed Character.—The seed coat is white or ivory, veined and sometimes wrinkled. Shape slightly elongate, broadly oval to oval, sometimes bent sideways, ends evenly rounded, occasionally radical end dented, full to bulging at the eye. In cross section, oval. Measuring $1\frac{1}{32}$ x $1\frac{2}{32}$ x $\frac{8}{32}$ of an inch.

Season.—Intermediate or midseason.

Plant.—This is a quite strong growing good climber, vines slender, very vigorous, compact, reaching 10 to 12 feet, pale green, leaves large. Leaflets medium to thin, almost smooth, pale green.

Flowers.—White, medium sized, in pairs on stout stem with three to four pairs on a stem.

Fruiting Habit.—Pods set very freely in clusters extending over a long season. Colour wax yellow, surface smooth to slightly roughened, quite stout, slightly curved back and sometimes twisted, terminating bluntly, with a short bent, stub like point. Suture quite dark in cross section thick at the back quite flatly wedge shaped usually between 6 to 8 inches long, somewhat variable. Seeds arranged evenly quite far apart, usually 6 to 8 per pod. As snap pods very tender brittle, almost free of strings, which develop as the pods become mature. Walls moderately thick with only a slight amount of fibre. Fairly free from disease.

Adaptation.—Market and home garden.



* SCARLET RUNNER
(Background $\frac{1}{40}$ of an inch)

*SCARLET RUNNER

Phaseolus coccineus (Multiflorus type)

Synonyms.—Carter Champion, Champion Scarlet Runner, Fire Bean, Mammoth Scarlet, Scarlet Emperor.

Seed Characters.—The seed coat is mottled, the main colour being heliotrope, densely marked with dark, the major portion of marking being on the sides and close to the eye. Shape, almost kidney like, ends quite evenly rounded, straight to slightly indented at the eye. In cross section broad, flat, oval, measuring $3\frac{1}{32} \times 1\frac{7}{32} \times 1\frac{2}{32}$ of an inch.

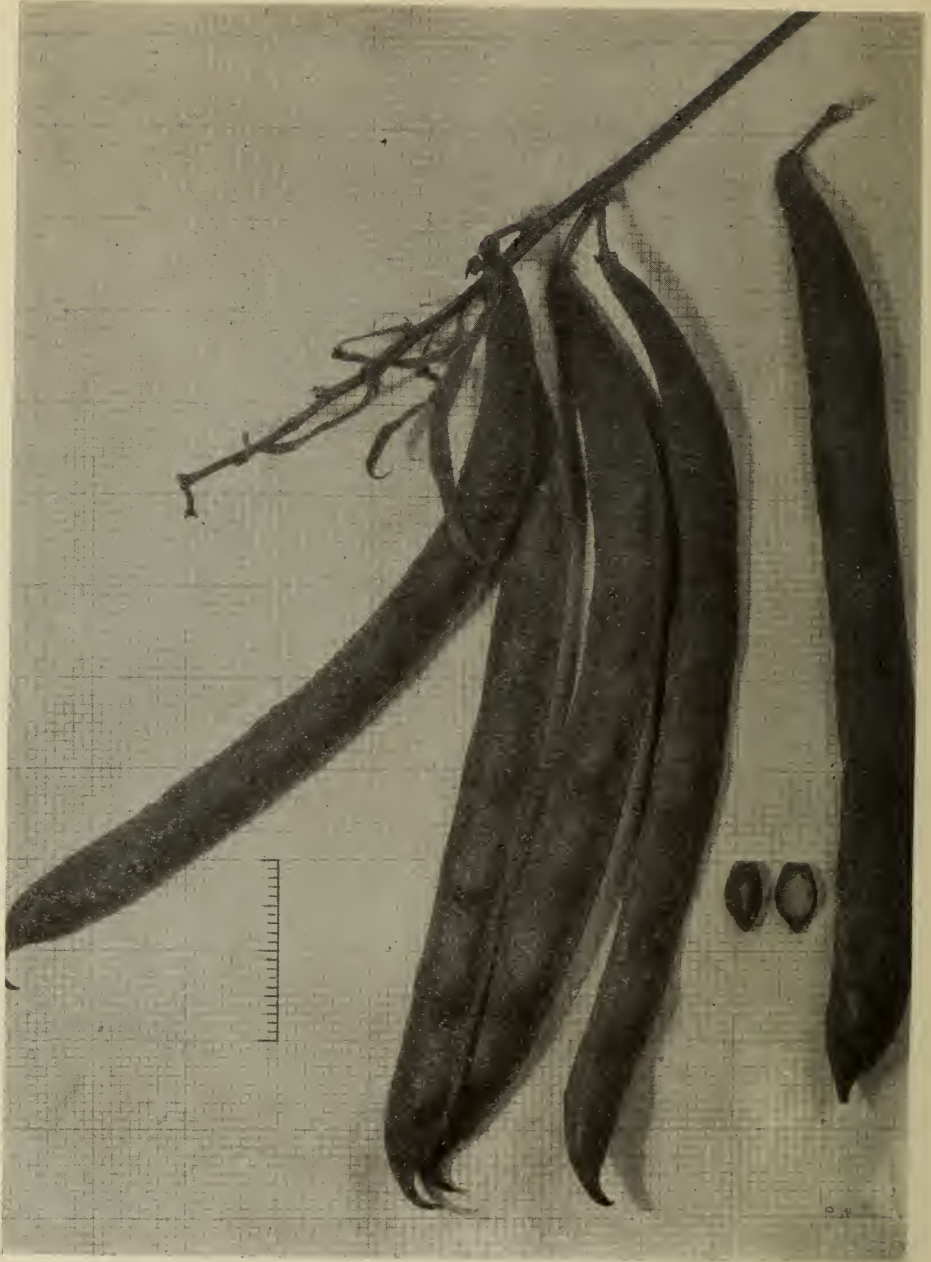
Season.—Midseason to late.

Plant.—The growth is vigorous, being a strong climber, very open. Vines stout, growing to a height of 12 to 15 feet, tinged with purple. Leaflets large sized, quite long, smooth, deep dark green.

Flowers.—These are produced in large clusters on long, strong stems in pairs. Colour, bright scarlet very striking.

Fruiting Habit.—Normally the pods set quite freely over a long season, colour deep green, surface rough, shape broad, flat, when young curved backwards, of uniform width, terminating abruptly with stout moderately fleshy point. The length varies around 6 inches long by $2\frac{5}{32}$ wide, $\frac{8}{32}$ of an inch thick. In cross section broad, flat oval. The seeds vary from 5 to 8 in the pod, well spaced, almost completely separated. Suture very pronounced dark green. Snap pods quite brittle when very young, stringy at all times. Walls fairly fleshy with considerable fibre. When mature the pods are a leather brown, thin tough and thresh easily.

Adaptation.—Used to a limited extent as a garden variety, chiefly looked upon as an ornamental type.



PRIZE WINNER
(Background $\frac{1}{10}$ of an inch)

PRIZE WINNER (SUTTON)

Phaseolus coccineus (Multiflorus type)

Synonyms.—Prizewinner, Prizewinner Scarlet Runner, Scarlet Prize Winner, Sutton Prize Winner.

Seed Character.—The seed coat is much the same as Scarlet Runner, the greatest difference being a lack of extensive overshadowing with black, the markings being scattered. A narrow ring of red surrounds the eye. In shape, quite kidney like, ends rounded, straight to slightly indented at the eye. In cross section flat oval, measuring $3\frac{0}{32}$ x $1\frac{7}{32}$ x $1\frac{1}{32}$ of an inch.

Season.—Midseason to late.

Plant.—The plants are vigorous growers, strong climbers, open. Vines stout, growing to a height of 12 to 15 feet, tinged with purple. Leaflets quite large, coarse, long, smooth, deep dark green.

Flowers.—The flowers are large in pairs. Colour showy scarlet, arranged along a long strong stem.

Fruiting Habit.—Pods set very freely forming large clusters over a long season. Colour deep green, surface rough. Shape, broad flat when young, bent backward slightly at stem end, thin, straight almost to the tip, terminating gradually into a fleshy back-curved dark point. Suture distinct, dark green. The length varies from 8 to over 10 inches by $2\frac{4}{32}$ of an inch wide, $1\frac{3}{32}$ of an inch thick. The seeds vary from 5 to 8 in the pod. As snap pods very brittle, tender, stringy at all stages except when very young, considerable fibre, wall fairly fleshy. When mature the pods are a leather brown colour, thin, tough and thresh easily.

Adaptation.—May be used as a garden variety, but very useful as an ornamental type.



WHITE CREASEBACK (BEST OF ALL)

(Background $\frac{1}{10}$ of an inch)

WHITE CREASEBACK (BEST OF ALL)

Phaseolus vulgaris

Synonyms.—Best of All, Best of All Pole, Creaseback, Creaseback Fat Horse, Creaseback White Seed, Earliest of All, Fat Horse, Fat Horse or Creaseback, July Climbing, July Pole, Missouri White Corn Field, Missouri White Corn Field Pole, Point Market Prolific Pole, Southern, Southern Creaseback, Southern White Creaseback, Tall July Runner, Transylvania Butter, White Corn Field Pole.

Seed Characters.—The seed coat is white overshadowed slightly with ivory. In shape elongated kidney, ends equal, uniformly rounded, measuring $1\frac{1}{32}$ x $\frac{8}{32}$ x $\frac{6}{32}$ of an inch, quite uniformly oval in cross section.

Season.—Moderately early to midseason.

Plant.—A rather small growing poor climbing plant, compact, quite vigorous, reaching a height of 8 feet. Stems are moderately stout, pale green. Leaflets medium in size and thickness, uniform shape flat. Surface slightly roughened. Colour pale green.

Flowers.—Medium to small in size, white, produced in pairs along a slender stem.

Fruiting Habit.—Pods set freely in pairs over a fairly long season, forming long clusters. Colour medium green, surface smooth very slightly constricted between seeds. Shape moderately slender, slightly curved, long, crease-backed, the point is blunt beak-like, almost round in cross section, full between seeds, tender, brittle, fleshy with little fibre, practically free from stringiness except in the mature stages. The pods measure 6 inches long $1\frac{1}{32}$ wide by $1\frac{2}{32}$ of an inch thick.

Adaptation.—A splendid moderately early or midseason variety, attractive and of excellent quality for home and market garden purposes.

ALPHABETICAL LIST OF VARIETIES AND SYNONYMOUS NAMES

(All synonyms in *italics*)

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